

INSTRUCTIONS AND DEFINITIONS FOR SURVEY OF INDUSTRIAL RESEARCH AND DEVELOPMENT DURING 1992 FORM RD-1A

GENERAL INSTRUCTIONS

Comprehensive and timely information about the nature and support of corporate research and development activities is an important component in the overall assessment of our nation's scientific and technological resources. The information you provide is used to prepare national measures of industrial research and development not available from any other source. By carefully completing this report, the accuracy of this information is ensured.

Estimates are acceptable – If you cannot answer a question from your company records, please estimate the answer carefully.

Report all value figures in thousands of dollars.

Example: 1,123,678,599 dollars.

Bil.	Mil.	Thou.	Dol.
\$ 1	123	679	000

Report

If you estimate your answers in millions of dollars, please fill the thousands box with zeros.

Example: 1,124 million dollars.

Bil.	Mil.	Thou.	Dol.
\$ 1	124	000	000

Report

Enter "0" where appropriate rather than leaving blank spaces.

If you have questions regarding reporting problems on this form, please write to the Bureau of the Census, Industry Division Washington, DC 20233 or call (301) 763-5598.

Additional forms – Photocopies of this form are acceptable. If you require additional forms, write to the Bureau of the Census, 1201 East 10th Street, Jeffersonville, IN 47132-0001 or call (812) 288-3331.

Report for your entire company – Research and development activities for your entire domestic company should be reported, including all divisions, etc. Report sales and employment figures for all parts of the company, even those that do not perform R&D, as long as they are located in the 50 States or the District of Columbia.

Period covered by the report – Figures should be reported on a calendar year basis. Fiscal year data, however, are acceptable for all items except for employment, provided your fiscal year ends between September and March. Please report employment figures (Item 1B and 3) for the specific time indicated for both of these items.

Geographic area covered – The data relate to business firms which operate one or more establishments in one or more of the 50 States or the District of Columbia.

The data are intended to relate to business firms in the fields of manufacturing, minerals, and other economic areas.

Please complete and return this form in the envelope provided within 60 days. Please make a copy for your records.

This report should cover your entire domestic company, including all subsidiaries and affiliates, unless otherwise designated.

Public reporting burden for this collection of information is estimated to average 1 hour per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimates or any other aspects of this collection of information including suggestions for reducing this burden to Herman G. Fleming, National Science Foundation, 1800 G. Street, Washington, DC 20550; and to the Office of Information and Regulatory Affairs, Office of Management and Budget (OMB No. 3145-0027), Washington, DC 20503.

DEFINITIONS

Research and development – Research and development includes basic research and applied research in the sciences and in engineering, and design and development of prototype products and processes.

For the purpose of this study, research and development includes activities carried on by persons trained, either formally or by experience, in the physical sciences including related engineering, and the biological sciences including medicine but excluding psychology, if the purpose of such activity is to do one or more of the following things:

1. Pursue a planned search for new knowledge, whether or not the search has reference to a specific application.
2. Apply existing knowledge to problems involved in the creation of a new product or process, including work required to evaluate possible uses.
3. Apply existing knowledge to problems involved in the improvement of a present product or process.

Research and development includes the activities described above whether assigned to separate R&D organizational units of the company or carried out by company laboratories and technical groups not part of an R&D organization. Reporting the R&D activities of such latter groups may require the use of estimates for some of the questions.

Activities to be excluded from R&D –

- Capital expenditures
- Routine product testing
- Research in social sciences or psychology
- Geological and geophysical exploration activities
- Technical services such as:
 - Quality and quantity control
 - Technical plant sanitation control
 - Trouble-shooting in connection with breakdowns in full-scale production
 - Advertising programs to promote or demonstrate new products or processes
 - Assistance in preparation of speeches and publications for persons not engaged in research and development

Research and development scientists and engineers

– Scientists and engineers are defined for this survey as all persons engaged in scientific or engineering work at a level which requires a knowledge of physical or life sciences, engineering, or mathematics equivalent to completion of a 4-year college course with a major in these fields, regardless of whether or not they actually hold a degree in this field.

This figure on R&D scientists and engineers will be obtained primarily from two sources:

1. For company laboratories performing only research and development, report the number of scientists and engineers on the rolls in January.
2. For companies whose activities are not solely devoted to research and development, report the proportion of total work time of scientists and engineers that is devoted to research and development. For example, if a company had 60 scientists and engineers in January 1993 and one-fourth of their time was charged to R&D projects, the figure for the number of scientists and engineers for this company would be 15.

SPECIFIC INSTRUCTIONS**Item 1 – SALES AND EMPLOYMENT FOR COMPANY (Domestic)****Item 1a – DOMESTIC NET SALES AND RECEIPTS –**

Report net sales and receipts for this company and its domestic subsidiaries. The reported figures should represent value f.o.b. plant after discounts and exclude freight charges and excise taxes.

Include:

- Sales of products and services to other companies, individuals, U.S. Government agencies, and foreign countries
- Transfers to foreign subsidiaries

Exclude:

- Domestic intra-company transfers
- Sales by foreign subsidiaries

Item 1B – DOMESTIC EMPLOYMENT – Report the number of employees of the company in all activities in the 50 States and the District of Columbia during the pay periods which include March 12 of 1991 and 1992. This figure would be the same as Item 1 of Treasury Form 941, if one Form 941 was filed for the entire company.

Item 2 – CHECK FOR RESEARCH AND DEVELOPMENT –

Check the appropriate box that best describes the R&D activities of your company.

Item 3 – REPORT COSTS INCURRED FOR RESEARCH AND DEVELOPMENT BY MAJOR TYPE AND SOURCE OF FUNDS –**Include:**

- Wages, salaries, and related costs
- Materials and supplies consumed
- R&D depreciation and overhead
- Cost of computer software used in R&D activities
- Total charges for work done on contract, including profit
- Utilities, such as telephone, telex, electricity, water, and gas
- Travel costs and professional dues
- Property taxes and other taxes (except income taxes) incurred on account of the R&D organization or the facilities they use

- Insurance expense
- Maintenance and repair, including maintenance of buildings and grounds
- Company overhead including: personnel, accounting, procurement and inventory, and salaries of research executives not on the payroll of the R&D organization

Exclude:

- R&D performed abroad (see ITEM 3.C.), such as in Canada and Puerto Rico
- Cost of R&D performed by non-company R&D organizations of any kind
- Capital expenditures
- Patent expenses
- Income taxes and interest
- The portion of company-held R&D contracts that were subcontracted outside the reporting company
- Fellowships, grants, and gifts to promote R&D or the study of science and engineering

Item 3.A – REPORT COST INCURRED FOR RESEARCH AND DEVELOPMENT PERFORMED WITHIN THE COMPANY**Types of Research**

Item 3.A.1 – BASIC RESEARCH – Include the cost of research projects which represent original investigation for the advancement of scientific knowledge and which do not have specific immediate commercial objectives (although they may be in the fields of present or potential interest to the reporting company).

Item 3.A.2.a – APPLIED RESEARCH – Includes the cost of research projects which represent investigation in discovery of new scientific knowledge and which have specific commercial objectives with respect to either products or processes.

Item 3.A.2.b – DEVELOPMENT – Include the cost of projects which represent technical activity concerned with non-routine problems encountered in translating research findings or other general scientific knowledge into products or process.

Exclude routine technical services to customers or other items excluded from the definition of total research and development.

Types of activities included in development

- Design and operation of pilot plants and semiwork plants
- Engineering activity required to advance the design of a product or process so it meets specific functional and economic requirements
- Design, construction, and testing of prototypes and models
- Designs for special manufacturing equipment and tools
- Preparation of reports, drawings, formulas, specifications standard practice instructions, or operating manuals

Types of activities excluded from development

- Toolmaking and tool tryout
- Production of detailed construction drawings and manufacturing blueprints
- Pre-production planning

Methods of estimating research and development expenditures by type (basic, applied, and development) – If your company does not keep records that meet or can be allocated to these specific categories, estimate by:

1. Isolating the projects that clearly fall in the development category. If your company fabricates products, such development activity will include the design, construction, and testing of prototypes and models. Some defense contracts typically call for several test models. If your company's research and development frequently involves the development of a "process" as in chemicals and petroleum, such development activity would include operations beyond the bench scale, primarily the design and operations of pilot plants or semiworks.
2. Isolating the organizational units which have R&D activities that can be readily classified based on the function assigned to the unit. If R&D work is done in production units as well as in various laboratories, it is generally development type.
3. Distributing the balance on the basis of individual projects or on the basis of other summaries of the work. Please use the definitions for basic, applied, and development given above.

Item 3.A.2.c – TOTAL APPLIED RESEARCH AND DEVELOPMENT – Add line 3.A.2.a and line 3.A.2.b.

Item 3.A.3 – TOTAL WITHIN COMPANY (BASIC RESEARCH AND APPLIED RESEARCH AND DEVELOPMENT) – Add line 3.A.1 and line 3.A.2.c.

Item 3.B – TOTAL COMPANY FUNDS FOR RESEARCH AND DEVELOPMENT ACTIVITIES FINANCED BY THE COMPANY BUT PERFORMED BY OTHERS OUTSIDE THE COMPANY WITHIN THE UNITED STATES – Includes payments for research and development activities in the form of contracts, grants, fellowships, etc., made to other industrial firms, commercial laboratories, consultants, educational institutions, hospitals, and research institutions, etc.

Exclude:

- Subcontracting of R&D contracts received from the Federal Government or other companies

Item 3.C – TOTAL COMPANY FUNDS FOR RESEARCH AND DEVELOPMENT ACTIVITIES PERFORMED BY FOREIGN SUBSIDIARIES OR BY OTHER ORGANIZATIONS OUTSIDE THE UNITED STATES – Report the amount of research and development financed by the U.S. parent or its foreign subsidiaries and performed by company R&D laboratories, branch plants, or other organizations, located outside the United States.

Include:

- R&D funds spent in Canada and Puerto Rico

Exclude:

- R&D activities performed by foreign subsidiaries which were financed by foreign governments or other outside organizations

NOTE – Foreign subsidiaries are those outside the 50 States or the District of Columbia.

Item 3.D – TOTAL – Company and other funds, except Federal. Add Items 3.A.3, 3.B, and 3.C.

SOURCE OF FUNDS

Item 3 – FEDERAL FUNDS (Columns 1 and 4)

Include:

- Cost or work done on Federal R&D contracts or subcontracts
- R&D portions of procurement contracts or subcontracts

Exclude:

Federal R&D contracts and R&D portions of procurement contracts that you subcontracted to other R&D organizations (including these would cause duplication in the statistical totals, which include data on work actually performed by each company).

Item 3 – COMPANY AND OTHER FUNDS (columns 2 and 5)

Include:

- All company-sponsored research and development performed within the company
- R&D performed under contract from non-federal sources

Exclude:

- Company sponsored research performed outside of the company

Item 4 – COMPANY AND OTHER FUNDS, EXCEPT FEDERAL, FOR R&D PERFORMED WITHIN THE COMPANY BUDGETED FOR THE YEAR 1993 – Report the estimated cost of company and other non-federally sponsored R&D that will be performed within the 50 States and the District of Columbia. This item is comparable to the 1992 figure reported in Item 3.A.3, column 5.

Item 5 – NUMBER OF RESEARCH AND DEVELOPMENT SCIENTISTS AND ENGINEERS – Scientists and engineers are defined for this survey as all persons engaged in scientific or engineering work at a level which requires a knowledge of physical or life sciences or engineering or mathematics equivalent to completion of a 4-year college course with a major in these fields, regardless of whether or not they actually hold a degree in this field.

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2. For companies whose activities are not solely devoted to research and development, report the proportion of total work time of scientists and engineers that is devoted to research and development. For example, if a company had the full-time equivalent of 60 scientists and engineers in January 1993 and one-fourth of their time was charged to R&D projects, the figure for the number of R&D scientists and engineers for this company would be 15.

Item 6A – OPERATIONAL STATUS – Indicate if this company was owned or controlled by another company on December 31, 1992.

Item 6B – Report the date the company was acquired and the new owner's name and address.

Item 7 – CERTIFICATION – Report the name and telephone number of the person to contact regarding this report.